

ROYAL ONTARIO MUSEUM - UNIVERSITY OF TORONTO

*Annual Report: 16
July 1965-June 1966*

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ROYAL ONTARIO MUSEUM



The Director's Report

Once again the Museum had a successful year, if success be measured by activity and public interest. All aspects of the staff's work increased; expeditions were successful, lectures and television series were given in acceptable number, cross-appointments number twenty, a new high level in co-operation within the University and a demanding and refreshing one. Great exhibitions were held, and on two occasions at least Museum functions were also brilliant social gatherings.

Yet space was restricted, storage room difficult, office space continued to be drawn, even if conservatively, from public galleries and laboratory space was hardest of all to come by, especially if the costs of modern equipment had also to be met.

The Museum has at the moment a group of highly qualified curators and as able a staff as ever in its history. We can now draw from a wide range of applicants in Canada, Britain and the United States when a vacancy arises. Groups from other universities and museums come to visit us and study our methods. We welcome them but we would welcome them with much greater enthusiasm if the areas behind the scenes were of as high a quality as the members of the staff.

The Museum is successful and, like other successful businesses, it must seek to maintain its success in more commodious premises. To do this is not easy. The heavy cost of building is not minimized by the time that it takes to build. Even a great gift that would enable us to add additional space would take several years of inconvenience and compression of facilities before the benefits could be enjoyed. The generous gift of the McLaughlin Planetarium is a case in point. Although announced as a gift nearly 18 months ago and planned as quickly as committees can do such things, not a single trace of its creation is yet upon the ground and no steps have yet been taken towards the demolition of premises that must first be removed. These delays may be inevitable, for planetariums are not yet in the "instant" group, but they disappoint, deter and lower morale.

It may be that the time has now come when bold replanning should be done. The easing of pressure can be obtained by adding substantially to the present building, by creating "live" (that is, usable and accessible) storage on the outer limits of the city or by separating either the Arts or the Sciences from the present union and housing them elsewhere.

Where the Museum itself has been able to take the initiative progress has been made. The creation of the new mineralogy gallery has gone on smoothly and speedily and already shows the shape of most interesting things to come. Developments in the palaeontology gallery have been slower but equipment of an interesting kind has been installed.

The year saw two considerable exhibitions of great public interest. First there were the *Dead Sea Scrolls*. This exhibition went to the British Museum direct from the Royal Ontario Museum and had a controversial reception in London. The exhibition of the year was, however, the *Art Treasures of Japan*, where at least two years' planning on the part of the Curator of the Far Eastern Department, followed

by visits to the three presentations of the exhibition in the United States by several members of the Royal Ontario Museum staff, resulted in a superb setting in the Armour Court and Exhibition Hall that was widely acclaimed. The exhibition was opened by His Excellency the Governor-General, who was accompanied by Madame Vanier, in an evening event of social brilliance and artistic delight. The exhibition was seen by 43,071 people in its 38-day stay.

Expeditions organized from the Museum included the continuance of the Jerusalem and British Honduras projects; a visit (with the C.B.C.) to the Galapagos Islands, which will result in a new diorama; a most successful archaeological foray into Iran; a scientific study of the Crown Jewels of Iran; and other excursions of academic significance but lesser geographical range.

Members of the staff engaged in teaching in the University departments on a wider scale and took part in a series of twelve television programmes on CFTO, organized by the University of the Air. Several members of the staff achieved remarkable financial recognition of their skills. Dr. Scott and his Department of Ichthyology received a \$55,000 contract from the Fisheries Research Board of Canada for co-operation in the next few years. Mr. Harold Burnham received a Senior Fellowship of \$5,000 from the Canada Council for research in Canadian textiles. Dr. Meen's gemmological excursion to Teheran was made possible by a generous grant of \$16,000 from the Birks Family Foundation of Montreal. Other benefactions are stated in the appropriate places in the Report but once again we must emphasize our appreciation of the continuing help of the Canadian Sportsmen's Show through its energetic Chairman, Frank Kortright.

Against these material gains must be set the ever present threat of loss. The number of our guards is insufficient for the security needs of today. Security services had to be employed additionally for the special exhibition but much of our permanent collections are at the mercy of the nimble-fingered and the nimble-minded.

We have held several Museum conferences on vandalism and the University Head of Security, at our request, made a helpful report on our problems and needs. The answer is, once more, that we actually require more guards than we are likely to get for financial reasons, and we need them now. Our present guards serve us well and loyally, but age and sickness take their toll and the calls for repeated overtime or special duties make their lot, like the policeman's, an unhappy one.

Staff

We record with profound regret the loss last July of the Associate Director, Mr. Lionel Massey. Mr. Massey joined the staff in 1961 as Director of Administration and two years later was appointed Associate Director. His ease of manner, his enthusiasm and loyalty to the Museum and the University and his readiness to learn and to consult made him an ideal colleague and a dear friend. The untimely tragedy of his death struck each one of us and his memory remains deeply embedded in our minds.

The position of Associate Director was not renewed but the Museum has been fortunate in securing Mr. J. Brook, formerly Secretary of the Board of Governors of the University, as Secretary-Treasurer. Mrs. Helen Downie was titled Programme Secretary and has had responsibility for the programme of lectures, exhibitions and social events.

Changes in staff were considerable and it says much for the new status of the Museum that it has become a quarry for staff selection for other institutions. Nearly all of those who have left the Museum have gone to positions of their choice. Mr. Ian Montagnes (Information Officer) left on June 30 to go to the University of Toronto Press; Mr. John Hillen and Miss Frances Brittain (Display—Mineralogy) left for the Centennial Centre of Science and Technology; Mr. D. Baldwin (Ornithology) moved to Upper Canada College. W. E. Swinton, the Director from 1963 to 1966, retired under the University's new age limit for administrators.

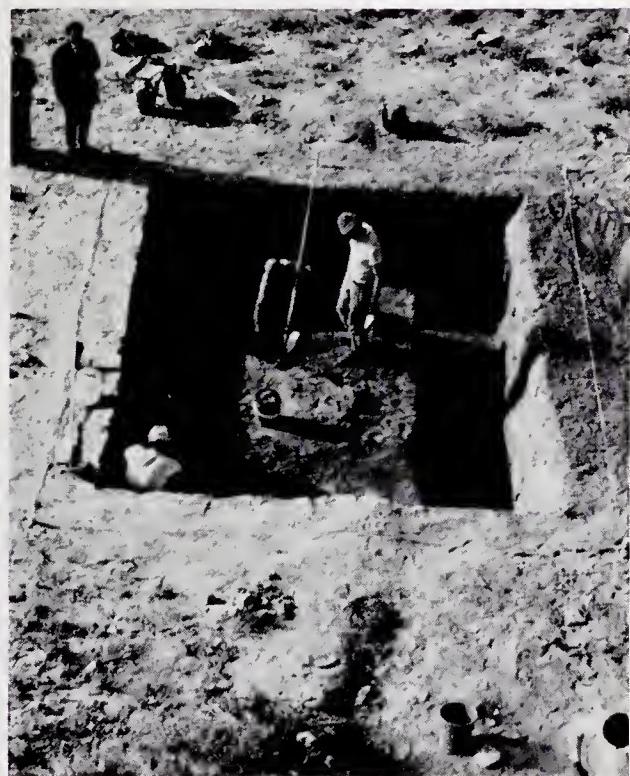
ROM expeditions around the world



Marine iguanas guard Galapagos Islands.



Burial site of Mayan priest
unearthed at Altun Ha, British Honduras.



Beginning test excavations
at Godin Tepe, Iran.



Divers recover an object
from the wreck of the *Ida Walker* which sank in Lake Ontario
near Trenton in the 1870's.

Art and Archaeology Departments

The Chief Archaeologist reports that the Museum's archaeological programme was continued in four main areas of which Ontario had top priority. With only one Indian archaeologist on the staff—Mr. Kenyon—we were forced to cope with prehistoric archaeology, historic archaeology and salvage operations (the recording of sites about to be destroyed by new construction, highways, pipelines and the like). To this has now been added underwater archaeology, a field of research requiring trained divers who also know something of archaeological techniques and purposes. With such a diverse programme and with such demands from every direction, it has been impossible to work out, and adhere to, an archaeological strategy which could promise valuable and long-term results.

Following the successful underwater "seminar" held in May, 1965, near Presqu'ile, Ontario, on a known wreck, it was possible to carry out several investigations. These were under the general supervision of Mr. Kenyon, but would have been impossible without the enthusiastic and fast-learning members of several of the SCUBA clubs in Ontario who volunteered their time, provided their own equipment and gladly submitted to the archaeological discipline while working under the aegis of the Archaeological Council for Canadian Waterways (ACCWA). Much of the work was exploratory but, in the case of the Narrows between Lake Couchiching and Lake Simcoe, it was finally possible to record and plot the weirs which had for long been the Indian solution to the problem of fishing on a large scale.

British Honduras. Under the directorship of Dr. David M. Pendergast, the Museum's field project at the site of Altun Ha (Rockstone Pond) in British Honduras is in its fourth season. The results continued to be important. Temporary displays of the objects found were held in the Museum and at the Glenbow-Alberta Institute in Calgary. The Harvie Foundation of Calgary continued to be a generous supporter of our Central American project. The University of Utah, where Dr. Pendergast teaches each year, generously made a contribution towards the cost of labourers in the 1966 season.

Iran. A project to study and publish a book on the Iranian Crown Jewels, which was initiated by Dr. V. B. Meen, Chief Mineralogist of the Museum, required the documentation of the jewels from an historic and art-historic viewpoint and he asked the Chief Archaeologist to take responsibility for this work.

Jerusalem. Collaboration between the Royal Ontario Museum and the British School of Archaeology for the excavation of the Old City of Jerusalem was continued, for the fourth year, in the summer of 1965. The Museum was supported financially in this project by the universities of Toronto, Victoria, Trinity and St. Michael's; McGill University, Trent University, Carleton University and several private donors. The Canadian team consisted of Dr. D. B. Redford, Dr. E. G. Clarke, Father T. Forestell, Mr. Svend Helms, Mr. Peter Preuss, and Dr. Tushingham who, as Associate Director, shared the responsibility for conducting the excavation with Miss Kathleen Kenyon of the British School.

Archaeology as a humanistic discipline has been embraced by universities in the United States and Europe and as a cultural complement—unfortunately—to political and economic nationalism in most of the emerging countries. Canada's leading university will follow the trend. Already, members of the Museum staff are teaching archaeology in University departments, although as yet there is no co-ordinated academic programme in archaeology. The Museum's field projects provide opportunities for members of the University staff and for graduate students to gain experience in Canadian-run expeditions.



This globe, almost two feet in diameter, is one of the most spectacular pieces in the crown jewels of Iran. The frame and stand consist of 75 lbs. of fine gold. They are set with more than 51,000 precious stones. The seas are emeralds; the land is of rubies, diamonds and sapphires. It was completed in 1869. The ROM received special permission to make the first scientific study of the crown jewels of Iran.

Department of Ethnology

Dr. E. S. Rogers, Curator, reports that research was carried out, and is now nearly completed, on fur census data from three Indian groups in the Patricias, covering the past 14 years.

A programme was initiated with the co-operation of the Ontario Department of Lands and Forests to collect data regarding the amounts of country game secured annually by the Indians of Northern Ontario. Data for the year 1964-65 have now been secured.

Research was continued on the acculturation of the Parry Island Indians, Parry Sound, Ontario, covering the past fifty years.

Several lectures were given and a T.V. programme presented. The Curator gave a course, "Culture and Ecology Technology," to graduate students in the Department of Anthropology, University of Toronto from October through March. The Curator also served as consultant on many bodies. His Department is one that has especially felt the pressure on public space and four galleries had to be closed for study space, storage and offices.

European Department

Mr. Hickl-Szabo, Assistant Curator-in-Charge, states that the past winter saw a large-scale recataloguing of objects, many of which had not previously been renumbered with the current catalogue numbers, or fully and properly described, and the Department has been hard at work on the project in collaboration with the Registrar's office. On the basis of this, it is intended to produce a European Department Guide.

Mr. Brett has worked on his projected publication of the English pottery in the Museum, and has already done a great deal of the descriptive work on the early section. The Museum's collection of English pottery is large, and the early material is especially important.

Mr. Hickl-Szabo has been preparing an article on European porcelain displayed in our galleries.

Hitherto the Department set aside Wednesdays for the identification of objects brought in by the public, and the whole day has usually been given up to such appointments. This work of identification sometimes entails appointments outside the building on other days as well, or in the evenings. From now on appointments for identification can be made for any day of the working week.

A long-term loan of fine English silver was exhibited for a month at Christmas time before being dispersed among our own collection. Special cases are now reserved for showing recent accessions or small interesting collections of objects, and their contents are changed frequently.

The Department gave a course of lectures to students in the University Department of Fine Art, "The Decorative Arts in France, England, and Canada."

Several changes were made in the galleries. The fireplace set up a year ago in Gallery 7 was given a more authentic setting by means of a panelled surround. The cases in Gallery 9 have been rebacked with good velvet, thanks to the generosity of Mrs. Donald Early, who gave us the velvet, and the objects have been more attractively displayed. However, the need for air-conditioning remains acute. The use of the Armour Court for special exhibitions continually interrupts our plans but we have attempted to make it permanently available for exhibitions and other extramural affairs with a minimum of movement of cases and material.

Once again the Department records its thanks to generous donors, among whom the name of Mrs. Donald Early always figures.

Far Eastern Department

The energies of the Far Eastern Department during the year were largely devoted to preparation for and installation of *Art Treasures of Japan*. This show was the largest and most important mounted by this Museum in recent years and involved a large amount of planning and prior arrangement, as well as continuing attention and



Art Treasures from Japan

work while it was open to the public. This work included the changing of many of the objects at mid-point of the show for reasons of safety and conservation.

The exhibition, which took eight years to prepare, was jointly organized and assembled by the Japanese National Commission for Protection of Cultural Properties and a committee of specialists representing the four participating museums: Royal Ontario Museum, Los Angeles County Museum of Art, Detroit Institute of Arts and Philadelphia Museum of Art. Mr. Trubner, who was the first to approach the Japanese authorities about the possibilities of a major exhibition as early as 1957, when he was still Curator at the Los Angeles County Museum, was a member of this committee, which in the autumn of 1964 visited Japan to select the objects and conclude the exhibition contract with representatives of the Japanese National Commission.

Groups came to Toronto to see the exhibition from as far away as Montreal and New York State, as well as from many cities and towns in Ontario. The Curator, Mr. Trubner, during the year attended the openings of the exhibition at the other three museums as a member of the committee of participating museums. Mrs. Stephen and Mrs. Motamedi accompanied him to the opening on December 8 in Detroit and attended the seminar on Japanese Art given the following two days.

The exhibition was accompanied by four Japanese curators. They were responsible for the packing, unpacking, handling and mounting of the treasures in the display area, designed and planned by the Royal Ontario Museum.

The labelling and recataloguing of all Far Eastern pieces on exhibition was completed. Similar work was continued in the storage collections. With volunteer help by Mrs. Murray Bell of the Members' Committee, available record photographic prints of museum objects were mounted and made into a photographic file for the use of visitors and staff.

Mr. Trubner completed work on the *Guide* to the Far Eastern Galleries which will describe the most important objects in the Chinese, Japanese, Korean and Indian collections.

In September, Mrs. Stephen visited libraries in New York to continue her research on the early bronze age chariot. A draft of her paper on the early chariot in China is almost complete.

During the year two Chinese scholars worked on the oracle bone collections. The first was Mr. Chou Hung-hsiang from Australia, who spent several months studying the bones. Dr. Ch'u Wan-li, of the Institute of History and Philology, Academia Sinica, Taiwan, visited the Museum during June while he was in Toronto as a special lecturer in the Department of East Asian Studies.

Art Treasures of Japan, with its 161 objects including 30 National Treasures, opened on April 28. The President of the University honoured the occasion with a dinner in the Great Hall of Hart House. Mr. Hisanaga Shimadzu, Ambassador of Japan, gave a brief speech commending the show for strengthening cultural relations between Japan and Canada, after which the exhibition was officially opened by His Excellency, Governor-General Georges Vanier, who paid particular tribute to the Japanese contribution to Canadian life and culture. Around one thousand guests, many from out of town, attended the opening and preview, including representatives of the participating museums and many other museum officials. During the period of the exhibition, from April 29 to June 5, the Museum remained open Thursday evenings, and during the final week opened Friday evening as well. The total attendance was 43,071 paid admissions, 29,763 adults and 13,308 children, and 6,191 catalogues were sold, including those sold before the opening.

A free public lecture series on "The Art of Japan," arranged in co-operation with the School of Graduate Studies, Departments of Fine Art and East Asian Studies, included six lectures by well-known specialists on different aspects of Japanese art.

Greek and Roman Department

The chief event in the Department was the acquisition of a large collection of Cypriote antiquities given to the Museum by the Dowager Lady Loch in the summer of 1965. With the addition of this generous gift the Museum's Cypriote collection has become the second largest on the continent. The Loch collection comprises about three hundred objects of various categories (pottery, glass, jewellery, terracotta figurines, etc.) encompassing all the periods from the Early Bronze Age through Roman times and containing a number of pieces of outstanding quality.

Mrs. Neda Leipen, Associate Curator in the Department, has spent the better part of the year studying and classifying the objects and preparing the catalogue. The latter is to be published for a special exhibition of the Loch collection to be held in the autumn of 1966. The special showing will be in memory of the late Mr. Lionel Massey, the Museum's former Associate Director, through whose good offices the Loch collection was received.



This female head (ca 500 B.C.)
is one of 300 Cypriote
antiquities donated to the ROM
by the Dowager Lady Loch.

Miss Alison Harle, Curatorial Assistant, prepared the section on lamps in the Loch collection catalogue, and helped in many ways with the work on the collection. She studied and rearranged the exhibit of Greek and Roman engraved gems. In the new Greek Sculpture Court two heads were prepared for exhibition and installed in specially designed settings.

During the year Professor Walter Graham of the Department of Fine Art, University of Toronto, who had been cross-appointed for some years as Curator of the Greek and Roman Department, decided that he would like to resign his curatorship. His resignation was accepted with much regret but with warm thanks for his contribution to the gallery displays. Mrs. Leipen was accordingly appointed Associate Curator-in-Charge of the Department.

Near Eastern Department

The Department under Miss Needler's curatorship had a busy year. Dr. Young, the Assistant Curator, states that the Royal Ontario Museum Project in western Iran has been fortunate in receiving a considerable amount of favourable publicity both in Iran and in North America. On two occasions articles on the Project's work appeared in both the Persian and the English language press in Teheran. Both the survey and the excavation work were fully reported in the Canadian press, the excavation having been carried by the Canadian wire services. Dr. Young has been interviewed on the field work in one television and two radio broadcasts. A most promising feature of the Project is the close co-operation with the field project of Dr. P. E. L. Smith of the Department of Anthropology, University of Toronto (soon to join the faculty of l'Université de Montréal). Plans for continued co-operation in future field seasons have been laid.

Collaboration with the British School of Archaeology in Jerusalem continued during the 1965 season of excavation at Jerusalem, directed by K. M. Kenyon, Dr. Tushingham acting as Assistant Director.

The Museum contributed \$1,000 to the excavations of the Egypt Exploration Society at Saqqara, directed by Professor W. B. Emery, and £200 to the excavations of the British Institute of Archaeology at Ankara, directed by Dr. Oliver Gurney and James Mellaart.

In the galleries the prehistory collection was broken up and a Near Eastern prehistory display was planned. Considerable relabelling was done and some cases were fitted with lights.

The Department's special exhibition was *The Dead Sea Scrolls from Jordan* from October 18 to November 8. Admission was free. No separate attendance figures for the exhibition are available, but from the general museum attendance figures for the period it is estimated that over 60,000 visitors saw the exhibition.

Both Miss Needler and Dr. Young took an active part in teaching Near Eastern history.

Dead Sea Scroll
from Jordan.



Textile Department

Cataloguing new acquisitions is a primary task in this Department because of the continual flow of material (mostly gifts) into it. Those pieces acquired during the year (423 items) were mostly costume, much of it worn in Canada (258 items) and Canadian textiles (120 items). Recataloguing of early acquisitions continued in all fields.

The storage of the Canadian and related American material was reorganized, and these collections are now in new cabinets in one office. The space previously occupied by this material now contains costume. All the cupboards in the large textile study room now have as much costume as they can hold. The storage of the collection of Japanese country textiles and costume was reorganized. The need for storage is desperate.

Many items were washed or dry-cleaned by Mr. Burnham during the year. Of these, 66 examples of lace were blocked by Mrs. Jarvie and 20 pieces of various kinds mounted by Mrs. Zuppinger, including the large and important fourth-century linen curtain now on display again in the Coptic Gallery. Small repairs were made to a number of items.

Research in Canadian textiles and costumes was accelerated and all efforts were made to allow Mr. Burnham to devote as much time as possible to the examination and recording of Canadian textiles from other museums and private collections. A detailed study was made of 548 examples and data transferred to the central file established in the Textile Department.

In March, 1966, Mr. Burnham was granted a senior fellowship of \$5,000 by the Canada Council to pursue research on Canadian textiles in parts of Canada other than Ontario, and in the British Isles and Europe. This fellowship is for one year commencing August 1, 1966.

The recording by Mrs. Brett of costume worn in Canada has also progressed. Here the emphasis has been on preparation first of a companion booklet in the "W" series on women's costume in Ontario 1867-1907 and of a catalogue for the proposed Centennial Exhibition in the Museum of costume worn in Canada.

Mrs. Brett re-examined the collection of Indian chintzes, in the light of her studies in Vienna and France in the spring of 1965 for the catalogue of the collection, now in its final stages.

Mr. Burnham continued research on Persian velvets, and made a detailed study of some of our Chinese rugs for Dr. H. A. Lorentz of Hamburg, Germany, who is preparing a publication in this field. Mr. Burnham also continued work on an occasional paper on Salish spinning and weaving.

Our storage space, even with the additional space which will be available behind showcases in the former Pre-history gallery, is reaching the dangerous point at which the safety of the collections cannot be guaranteed and ever increasing vigilance is necessary. The obvious disastrous solution would be to cease accepting any further gifts or making further purchases. This runs counter to the Museum's life-long policy and would jeopardize the development of this Department, the largest and most important of its kind in Canada.

More curatorial and technical staff are necessary for research and publication of the collections and to serve students and the public. With the present permanent and occasional staff there is no room for a single additional body should an opportunity arise to appoint one. The working space is so confined that it seriously hinders efficiency unless arrival and departure of part-time staff is carefully dovetailed. This is not always possible when special projects requiring the services of all are in progress.

During the latter part of September and the month of October, Mr. Burnham visited 28 museums in Great Britain and Switzerland, studying and recording examples of Canadian and related material. He attended the meetings of Centre International d'Etude des Textiles Anciens in Lyon, France, where he was re-elected a member of Conseil de Direction, and gave a short paper on Canadian textiles.

Working under contract with the National Museum of Canada, Ottawa, Mr.

Burnham catalogued their collections of Canadian textiles. In addition some twenty short field trips were undertaken in Ontario investigating and searching for Ontario textiles.

An exhibition of 19 eighteenth-century chintzes and French printed textiles from the Harry Wearne Collection and 3 Canadian quilts were sent to the Musée des Etoffes Imprimées, Mulhouse, France, in connection with a Canadian festival held there during the last week of May, 1966. The exhibition will remain on view until the end of September. An introduction to the catalogue and notes on each piece were written by Mrs. Brett. Two panels of seventeenth- and eighteenth-century European laces were prepared for the annual opening of the Glenhyrst Museum, Brantford, Ontario.

The Curators have given courses at undergraduate level at the University of Toronto, Guelph University, Ryerson Institute and the Ontario College of Art.

The Department, as always, records its gratitude to many good friends whose support is greatly valued. Once again the names of Miss I. F. Chambers, Mrs. David Meltzer, Mrs. Edgar Stone and Mr. J. M. Morley occur so frequently as to demand mention here. Tribute should also be paid to the York Knitting Mills (Harvey Woods Division) for a valuable gift.

Philately

Mr. Douglas Patrick, Honorary Auditor, continued his enthusiastic work with stamps. The regular rotation of interesting displays attracted much attention and Mr. Patrick was able to encourage a wide audience to visit the Museum through his popular radio programmes and by his articles in the *Globe and Mail*. We much appreciate Mr. Patrick's interest and work on our behalf.

Canadiana Department

First attempts in field research and archaeology were the major developments in the Canadiana Department during the year. The results from this work determined the enormous unexplored potential of the Canadian field and should greatly assist future acquisition and publication policy.

Basic research on the nature, extent and availability of regional material in the Atlantic Provinces and Manitoba was carried out by the Curatorial Assistant-in-Charge, Miss June Biggar. Miss Biggar also attended the first Pennsbury Forum on American Decorative Arts and was one of 20 candidates in a standards and training seminar programme initiated by the Canadian Museums Association at Winnipeg in June, 1966.

A Canada Council grant of \$3,000 was given for the preparation of a *catalogue raisonné* of approximately 1,500 drawings in the Canadiana Collections, enabling Mrs. Mary Allodi, Research Assistant, to continue her research, travel, and preparation of a manuscript for publication.

The extended scope of the Canadiana field was also reflected in this year's accessions. Despite mounting prices and difficulty in acquiring significant material, approximately 150 objects were added to the collections, over half of which were gifts. In addition to the Canada Council and provincial grants, the Dominion Glass Company Limited, Montreal, continued to support basic research in Canadian glass. Twenty-six objects, which form part of the Canadiana Collections, were presented to the Dominion Glass Centennial Collection of Early Canadian Glass.

Internal organization of departmental records and library was continued by Miss Janet Holmes, Research Assistant, whose library and archival training were timely assets to the Department. In addition to research services Miss Holmes was responsible for the library and slide storage projects which she carried out with assistance from the Members' Committee. Some 4,000 books, periodicals and pamphlets were labelled and shelved under her direction.

Approximately 100 books were added to the departmental reference library. Mrs. Ian Townley of the Members' Committee has undertaken the cataloguing and

FOUND In a Canadian Attic

Wooden shoes for horses (right) and butter moulds (below) were part of the exhibition *In a Canadian Attic* which set attendance records at the Sigmund Samuel Canadiana Building.



co-ordination of the coin and medal collection, much of which was recently transferred from the European Department.

With the assistance of the Photography Department, the first complete record of negative numbers of Canadiana material was made. Approximately 1,000 slides were added to the Canadiana Slide Library. Visual slide storage equipment capable of storing 6,000 slides was purchased, with the organization, cataloguing and labelling of the collection remaining a continuing project.

In co-operation with the Board of Education of the City of Toronto, 100 maps in the Samuel Collection were made available to the Board's photographer for taking some 150 colour slides to be used for circulation along with a descriptive catalogue as visual aid material in Toronto schools. A set of these slides was given to the Canadiana Slide Library. Similar slide projects were undertaken with Guelph and McMaster universities. Consideration is now being given to the mounting problem of serving the growing demand for use of the Canadiana Slide Collection and materials by other institutions. This policy was well advertised with good public response.

Because of the inaccessible location of the Canadiana Building and the fact that 90 per cent of the Canadiana Collections is in storage or on loan at all times, rotation of exhibits continues as the best means of drawing public attention to the Canadiana Collections and Building. The introduction of a "recent acquisitions" case at the entrance hall of the building has created much interest.

With members of the History Department, Mr. Stevens and Miss Biggar were special lecturers and panel members in a two-day seminar conference at McMaster University, on the subject "Ontario Heritage 1825-1850." They were also guests on Ryerson Institute's television programme "Open Mind," an hour's discussion on the scope and potential of the study of Canada's material culture.

In her new position as Guide-Lecturer, Mrs. Helen Ignatieff lectured to

approximately 87 groups representing over 2,900 people and was available in the galleries for consultation. This service was greatly appreciated by the public.

The Canadiana Building was open during the evening for the first time during the winter Museum Extension Series, "In Search of Quebec."

Department of Geology

As planned, Mr. R. G. Hirst resigned September 30, 1965, to take a temporary position at the Smithsonian Institution in Washington, before going back to Australia.

Dr. Walter Tovell states that the identification and reorganization of material in collection was continued. The Research Associate, Dr. P. A. Peach, and Mr. Hirst completed the sorting of the igneous rocks in the systematic petrographic collection, and Dr. Peach is working on a new system for arranging a systematic metamorphic rock collection.

Dr. Tovell continued his study of raised beaches on the east shore of Lake Superior and Sault Ste. Marie area, in association with Professor R. E. Deane, Department of Geology, University of Toronto. The programme was altered on the untimely death of Dr. Deane. The work will be continued and hopefully completed in co-operation with Mr. Lewis of the Geological Survey of Canada. Emphasis for future work will switch to the Bruce Peninsula, in order to establish a more positive correlation of glacial lake levels between Georgian Bay, Lake Huron and the Sault Ste. Marie area.

Dr. Tovell was heavily involved in University teaching and was able to undertake the course that Professor Deane should have conducted. In addition many lectures were given for teachers and societies.

Department of Mineralogy

Dr. J. A. Mandarino (Curator) and Dr. D. C. Harris (Assistant Curator) continued their study of the minerals of Mont St. Hilaire, Quebec. Dr. Harris is collaborating with members of the Geological Survey of Canada on a study of kobellite and a new mineral related to kobellite. Dr. Mandarino is investigating samples of the pyroaurite group from a new Ontario locality.

Field research was restricted almost exclusively to the collection of minerals from Mont St. Hilaire.

Considerable work was involved in the progress of the new mineralogy gallery.

Section of the
new mineralogy
gallery now under
construction.



Significant gaps in our collection were filled by purchase of portions of the Horn Collection. A revitalized exchange programme has resulted in the addition of many excellent display specimens and several species new to the collections. About 35 new species were acquired.

Dr. Mandarino was elected to Fellowship in the Mineralogical Society of America. He was appointed to the Mineralogical Society of America Nomenclature Committee. He served as a co-chairman of the Mineralogical Society of America's scientific session at a joint meeting of the Institute on Lake Superior Geology, the Mineralogical Society of America and the Society of Economic Geologists at Sault Ste. Marie, Michigan, on May 7, 1966. He led a field trip for the M.S.A. in the Manitouwadge area on May 4 and 5, 1966. He continues to serve on the executive committee of the Mineralogical Association of Canada. Both Dr. Mandarino and Dr. Harris are councillors of the Walker Mineralogical Club.

The Chief Biologist

Dr. L. S. Russell reports that under a grant from the National Research Council of Canada he spent approximately six weeks of the early summer searching for fossils in the Upper Cretaceous and Palaeocene rocks of Alberta. The expedition included R. R. Hornell and G. Gyrmov of the Museum staff, and L. A. Lindoe of Medicine Hat. The main effort was in the Swan Hills of northern Alberta, where good Palaeocene fauna was obtained and the highest occurrences of dinosaur remains recorded. Related material was collected from localities in southern Alberta.

With the assistance of Hornell, the sorting was completed of disintegrated residues from fossil beds in Swan Hills and from southern Alberta. The determinable specimens were mounted for examination and preliminary identifications were made. The mammalian fauna has been found to be very similar to that of the Tiffanian Palaeocene in Montana and Colorado.

An historical study has been completed of the discovery and collecting of dinosaurian fossils in western Canada, from 1874 to 1965.

Triassic and Jurassic mammalian fossils in the British Museum (Natural History) and University College, University of London, were examined in England.

Dr. Russell continued his lectures on vertebrate palaeontology for fourth-year and graduate students in Zoology, and for third-year students in Geology.

The Artist-Craftsman prepared illustrations for scientific reports and charts for lectures for the use of the Chief Biologist. He also completed art work for most of the other science departments. Among these projects were the drawings for the Museum pamphlets on Dinosaurs, the Mastodon, Invertebrate Fossils and the Niagara Escarpment. Important illustrations were prepared for the Department of Ichthyology and Herpetology and the Department of Mammalogy. Assistance was given to the Department of Display Biology, in the preparation of the Galapagos diorama.

Department of Entomology and Invertebrate Zoology

Dr. E. M. Walker, Honorary Curator, was unable to resume work on the third volume of his *Odonata of Canada and Alaska*, although he had completed almost all of the first draft before his illness. It was stated in last year's report that the collation and completion of Dr. Walker's manuscript was to be undertaken by Dr. Philip S. Corbet, and this work is continuing as Dr. Corbet is able to do it. We are, however, pleased to report that the volume of papers in tribute to Dr. Walker, edited by the Curator, has been completed and is at the University of Toronto Press. It is especially pleasant to announce here that the room housing our collection of pinned insects has been designated the Edmund M. Walker Room in recognition of Dr. Walker's long association with the growth of this Department. It was he who took on the organization of the Museum's insect collection when the institution was first established in 1914, and he has contributed actively to its growth since that time. Dr. Walker was Assistant Director of the Royal Ontario Museum of Zoology from 1918 until 1931, and was then appointed Honorary Curator of Entomology, the position he still holds.

Crayfishes of Ontario
are studied for a
definitive handbook on
the subject to be
published by 1968.



The Curator's work on Trichoptera during the past year consisted largely of identifying materials from past field expeditions and completion and reorganization of the collection of caddisflies in alcohol. A study aimed at presenting the considerable amount of new information now accumulated on the limnephilid caddisflies of western North America was begun, and a series of illustrations prepared. In October the Curator's grant from the National Science Foundation was renewed for a second three-year term. This support makes it possible to plan three extended collecting trips to western North America to enlarge the Museum's already extensive collections of caddisflies. The Curator and Mr. T. W. Beak, one of the Department's research associates, this year received jointly a National Health Grant from the Canada Department of National Health and Welfare. This is for the support of a baseline survey of the bottom-dwelling invertebrates in portions of the St. Lawrence and Ottawa rivers. Collections made at fixed stations during annual and seasonal intervals will be housed permanently in the Museum so that there will be a record of the composition of the benthic fauna of these stations in the St. Lawrence and Ottawa rivers at a relatively early stage in their pollution history. A large part of the Curator's time during the past year has been devoted to the book, *Centennial of Entomology in Canada, 1863-1963: A Tribute to Edmund M. Walker*. Progress was also made with the series of half-tone illustrations of common invertebrates encountered in buildings, prepared by Miss Storwick and Mr. Odum, under the Curator's direction.

Father J. C. E. Riotte, our Research Associate on permanent staff, completed the manuscript for his *Distribution List of the Moths of Ontario*. His programme of field work was concentrated during the past year in two localities. From a base established in Rondeau Provincial Park he collected intensively from mid-May until mid-July. Shorter trips were made to Point Pelee (June 7, 10 and 29) and Pelee Island (July 7-9). Notable among his achievements for this year was discovery in Rondeau of the first records for Canada of one of the giant silk-moths *Hyalophora angulifera*, and on Pelee Island of the first Canadian records of the moths *Heterocampa subrotata* (Notodontidae) and *Psychomorpha epimensis* (Noctuidae). Further contributions to our collection of associated larvae resulted from Father Riotte's successful rearing of

the caterpillars of several more species of moths of the family Notodontidae. A period (July 15-29) was spent in Algonquin Provincial Park at the Fisheries Research Station on Lake Opeongo. Accompanying Father Riotte on these trips was a student assistant, Paul D. Hebert, who made collections of insects other than Lepidoptera. Father Riotte's studies on sphinx moths (Sphingidae) were furthered this year with the rearing of additional larvae in the *Sphinx gordius* complex, and with extensive use of microphotography to resolve the genitalic distinctions among the closely related species of the genus *Lapara*. He continued study of his sphingid material from Formosa, and of the lymantriid genus *Parorgyia*, with preliminary papers in both projects completed and submitted for publication. He made a series of short field trips in May, 1966, to study an Ontario colony of a rare butterfly, *Pieris virginensis*, and to make general collections of butterflies in sphagnum bogs. Reorganization of the collection of Lepidoptera was advanced this year with the addition of an identification label on each single specimen. Father Riotte attended the annual meeting of the Entomological Society of Ontario in September at the University of Western Ontario, and the annual meeting of the Lepidopterists' Society in May, 1966, in Ottawa. He visited the lepidopterists and studied collections at the Entomology Research Institute in Ottawa in November and April, and at the American Museum of Natural History in New York City in February.

This past year was the last in our study on the crayfishes of Ontario, and the work was again supported by a research grant from the Canadian National Sportsmen's Show. Dr. D. W. Crocker, one of our research associates, spent ten days of August in the Department going over plans for the manuscript. Mr. Barr, student assistant, spent the summer completing field observations on habitat, burrowing, etc., completing distributional data, and preparing the first draft of certain portions of the manuscript. He was successful in obtaining live specimens of the species of Ontario crayfishes to serve as subjects for the very fine series of photographs taken by Mr. Warren for the publication. He also worked with Miss Storwick to produce the series of line illustrations of crayfish structures and distribution maps for the publication. Dr. Crocker's manuscript is now being edited by the Curator, before going to the University of Toronto Press for publication.

This year a project on water mites in Ontario was begun under a grant received from the National Museum of Canada. A student assistant, Mr. Ian M. Smith, was engaged upon this study. In making field collections he spent periods at the Queen's University Biological Station, Algonquin and Rondeau provincial parks, Point Pelee National Park and in the vicinity of Baysville, Ontario. These collections of water mites and other aquatic invertebrates were divided between the Royal Ontario Museum and the National Museum.

The mollusc specimens selected and prepared for us at the University of Michigan Museum of Zoology by the Reverend H. B. Herrington were all received in good order. The new cabinets were built and installed, and we are now well into the task of unpacking and making new labels for the collection. It is gratifying that once again we have a fairly extensive research and reference collection of native freshwater and terrestrial molluscs.

The Curator was again invited to present a period of study on aquatic invertebrates in the third-year General Course on ecology. This took the form of a class field trip to Duffin's Creek, near Toronto, and a series of laboratory periods in which the collections were identified and the significance of the distributional patterns of different groups within the stream assessed. A preliminary laboratory outline was prepared for class use.

In the absence of any permanent gallery, we have continued to instal temporary exhibits in the rotunda of the third floor.

Department of Ichthyology and Herpetology

A study of the lanternfishes (family Myctophidae) of the Atlantic coast of Canada was continued and completed (to the extent of the Fisheries Research Board contract arrangement) in November. The study is proceeding and Drs. Scott and

Radforth are attempting to define not only the genera but also the species in the area and their distribution, morphology and ecology.

The review of the genus *Triglops* in the North Atlantic Ocean (family Cottidae) is continuing, in co-operation with a graduate student Mr. D. Webb.

A food study of large game fishes in Barbados has been carried on in co-operation with the Bellairs Research Institute of McGill University (Barbados) and with funds provided by the Canadian National Sportsmen's Show. The stomachs of approximately 50 large game fishes were analysed and the contained fishes identified in the Department. Much valuable reference material for our proposed long-term study of the fishes of the Caribbean was obtained.

A short-term study of a relict population of sunfishes, *Lepomis magalotis* (family Centrarchidae) in western Ontario was conducted in co-operation with a graduate student at the University of Ottawa. The resulting report has been accepted for publication.

Continuing studies of Atlantic fishes in co-operation with the staff of the Fisheries Research Board of Canada have resulted in two field guide type publications during the year.

The co-operative project with Vianney Legendre of Quebec, published in 1964, has been expanded at the request of the Department of Fisheries, Ottawa. We are now preparing a checklist of all Canadian fishes with French and English vernaculars.

The Associate Curator, Dr. E. J. Crossman, has made the electrophoretic comparison of proteins of the various members of the suborder Esocoidei. This work is now being carried out in the Vancouver laboratories of the Fisheries Research Board and the Department of Biochemistry, University of Toronto. Financial support for this work has been provided by the National Research Council.

Taxonomic comparison of the muskellunge *E. masquinongy* is continuing, including a study of developing pigmentation in the three described races. Financial support has been provided by the National Research Council.

Field studies by the Curator were limited by the time required on the Atlantic fishes manuscript and galleys and teaching commitments. However, two weeks were spent on the Atlantic coast gathering data on Atlantic fishes, in particular an undescribed whitefish (family Salmonidae).

The Associate Curator visited museums and universities in Paris, Zürich, Prague, Halle and London during July and August. In these institutions type specimens of six fossil representatives of esocoid fishes were examined and studied in detail. This was done with the support of the Canadian National Sportsmen's Show.

The graduate course, "Systematic Ichthyology," was presented throughout the academic year.

The Curator served on committees for six graduate students. Mr. Mujib was quartered in our Department for his three-year residence period.

The Associate Curator served as an outside adviser (M.A. candidate) for the Department of Zoology, Guelph University.

Within the Department new steel shelving erected in the corridor has permitted us to reorganize and reshelve the herpetological collection. Also the acquisition of Room 39 from the cleaning staff has provided working space for visiting herpetologists and storage of the catalogues and herpetological literature. The remainder of Room 39 has been arranged as a file room, a long-standing need in the Department.

Dr. Scott and Dr. Crossman have recently been awarded a grant of \$55,000 to be paid over a three-year period for the production of a manuscript on the Freshwater Fishes of Canada for the Fisheries Research Board of Canada.

Department of Mammalogy

The special bat research programme started last year progressed at a rather fantastic rate. A network of collectors, including both professional and amateur mammalogists, has been organized in many of the tropical and subtropical countries of the world. During the year, 2,224 bat specimens representing 14 families, 86 genera and at least 165 species were obtained from the following 17 countries: British

Honduras, Canada, Czechoslovakia, El Salvador, Galapagos Islands (Ecuador), Ghana, Guyana, Jamaica, Kenya, Lebanon, Malaysia, Malawi, Mexico, Philippines, United States, Uganda and West Pakistan.

At the end of 1959 the Museum's collection included only 972 specimens of bats, representing 9 families and 32 genera. Our bat collection now exceeds 5,000 specimens and includes representatives of all but two families. Perhaps even more significant than the wide representation of different kinds is our good fortune in receiving an unusual number of extremely rare and little known species.

The total number of mammal specimens acquired during the year was 2,579, 2,224 of which were bats.

Within the research programme of the Department, the final checking of the page proofs of *The Mammals of Eastern Canada* brought this project to its conclusion after ten years of effort. This book is scheduled for publication in September, 1966, by the Oxford University Press.

Several bat research projects are under way. With the aid of a grant from the National Research Council local studies of bat populations were carried out with Mr. M. Brock Fenton during both summer and winter seasons. The Curator had the good fortune to collect an unusual number of bats in Jamaica during the Christmas holidays. Aided by a grant from the Canadian National Sportsmen's Show, study of the late glacial grizzly bear specimen from Orillia was continued. The Curator is also directing the Ph.D. research programme of Mr. C. G. van Zyll de Jong, who is working on a taxonomic study of the Mustelid subfamily Lutrinae.

The Curator attended the annual meeting of the American Society of Mammalogists in Winnipeg, Manitoba, where he was again elected Vice-President. He was also elected to the Council of the Society of Systematic Zoology for a two-year term.

Department of Ornithology

Dr. Jon C. Barlow, Curator, prepared, measured, and otherwise examined critically 140 specimens of the European tree sparrow (*Passer montanus*) from both the North American population (introduced—vicinity of St. Louis, Mo.) and from near Ludwigsburg to assess morphostasis in the North American population. The results are to be presented at the International Ornithological Congress at Oxford in July, 1966. This research, part of a five-year study, was supported in part by a Frank M. Chapman Grant from the American Museum of Natural History and by a grant from the Canadian National Sportsmen's Show.

Labrador duck is a new specimen in the ROM's collection of Canadian birds.

This species has been extinct for 90 years and only 54 stuffed examples are known to exist.



Dr. Barlow and the Rev. R. C. Long (Research Associate) prepared and studied 150 freshly collected specimens of the black-capped chickadee (*Parus atricapillus*) in conjunction with a study of the subspecific composition of the enormous flocks of migrants of this species passing through southern Ontario in October in 1965.

Dr. Howard Savage (Research Associate) devoted considerable time to the identification of skeletal remains of vertebrates (including many birds) from Prehistoric and Historic Huron and Petun Indian middens in southern Ontario.

The Rev. R. C. Long, in addition to participating in the chickadee research, studied the systematics of the African amethyst starling (*Cinnyricinclus leucogaster*) (supported by a Chapman Grant), and surveyed our collection of African birds, with special reference to distributional and breeding records.

The grant from the Canadian National Sportsmen's Show already mentioned not only supported the Curator's study of European tree sparrows, but also provided funds for much needed equipment, a Friden desk calculator and a Bausch and Lomb, Spectronic 20, Spectrophotometer for the analysis of plumage colour differences. More especially, the grant provided for the collecting of 450 specimens of the house sparrow (*Passer domesticus*) from 7 localities in Ontario as part of a study of geographic variation of that introduced species in the Province. This research is the subject of Master's research by Mr. Douglas W. Forstall, a graduate student under Dr. Barlow's supervision in the Department of Zoology. Mr. D. H. Baldwin, Technician, and Mr. Ralph A. Davis, part-time junior Technician, collected house sparrows in northern Ontario in mid-November as a part of this project.

From mid-April to mid-May Dr. Barlow studied the behaviour of vireos, especially the gray vireo (*Vireo vicinior*) in the Davis, Del Norte and Chisos Mountains of West Texas. In addition to field observations 78 bird specimens, ca. 30 mammals, 3 snakes, 2 fishes and ca. 400 invertebrates were collected for the Museum. Gratifying results obtained while in the field include documentation of the ethology and ecology of the gray vireo not previously reported; establishment of the breeding of the black-eared vireo (*Vireo atricapillus*) in Brewster County (Chisos Mountains)—a 100-mile westward extension of the known breeding range; location of the elf owl (*Micrathene whitneyi*) in the Del Norte Mountains—a 100-mile northward range extension for this species; and the collection of an apparently new species of snail from the Chisos Mountains.

The work on the gray vireo was part of a study of several species of vireos in North America supported by a grant to Dr. Barlow from the National Research Council of Canada. Under the auspices of this same grant Dr. Barlow studied aspects of the ecology and ethology of the Philadelphia vireo (*Vireo philadelphicus*) in northern Ontario in June, accompanied by the Rev. Mr. Long and Mr. Ross James, a Master's degree candidate in the Department of Zoology studying the natural history of Ontario vireos under Dr. Barlow's supervision. In conjunction with the study of the Philadelphia vireo Mr. Baldwin collected specimens of this species in Quebec in June, while Mr. Davis was collecting individuals of this same species in northwestern Ontario.

In late June and through July, 1965, Mr. Baldwin collected 86 specimens of birds and surveyed the avifauna near Winisk on Hudson Bay in northern Ontario, this work being financed by the Canadian National Sportsmen's Show. From mid-April to mid-May he made a representative collection of over 300 specimens of birds in British Honduras working primarily at three localities, Rockstone Pond, Augustine and near Melinda.

Mr. James L. Baillie, Assistant Curator, continued his weekly documentation of the status of Ontario birds, a project of more than 35 years' duration.

The mounted specimens of the extinct great auk (*Pinguinus impennis*) and the Labrador duck (*Camtorhynchus labradorius*) acquired in July from Vassar College by the Department were on public display from October, 1965, until May, 1966.

A display demonstrating range of size in some orders of birds, designed by Dr. Barlow and Mr. Paul Geraghty, Museum artist, was exhibited by the Department,



Preparation of a diorama
for the "Hall of Fossil
Invertebrates."

representing the Museum at the Canadian National Sportsmen's Show between March 11 and March 18, 1966.

As in previous years rearrangement of the bird collection was continued and 12 cabinets were finished, raising the total to 104 completed. The Zoological Laboratory was equipped with fluorescent lighting.

Department of Invertebrate Palaeontology

Dr. R. R. H. Lemon records that research on marine molluscs of Pliocene and Recent age from both Atlantic and Pacific sides of the Panamanian Isthmus continued through the year although the time available for this work has been severely curtailed because of the demands of gallery projects and University teaching. The main task has been the preparation of three reports for publication. One describes the Pleistocene geology and faunas of the Santa Elena Peninsula of Ecuador and is now ready for press; a second paper, discussing problems of correlation between Ecuadorian and Peruvian Pleistocene sequences in the light of volcanic ash bands, has been completed since December but held back because it is to some extent dependent on discussions entered into in the Santa Elena paper, which in turn has been delayed while dates were obtained on shell material from three critical localities. These dates were finally obtained in May.

The third report now nearly completed lacks only the plates; it describes the gastropoda of the Santa Elena Pleistocene and constitutes the first of four parts of a major monograph covering the Pleistocene faunas of the entire southern Panamic and Peruvian faunal zones. During this taxonomic work type specimens in the British Museum (Natural History) were studied during a visit to London in July.

A second research project concerned with problems of alteration of aragonitic material in mollusc shells during early stages of diagenesis of containing sediments was also initiated. This is being carried on in co-operation with Professor F. W. Beales of the Department of Geology and dating of numerous shell samples was financed by the Department of Geology.

Field work at selected Pliocene and Pleistocene localities in the Caribbean region was also undertaken during August when considerable collections of molluscs were made in the Peninsula de Paraguana in Venezuela, Curaçao in the Dutch Antilles and the Lake Okeechobee and Cape Florida areas in southern Florida.

It is gratifying to record that the operating grant given by the National Research Council was again renewed for the fiscal year April 1, 1966 to March 31, 1967.

During the academic year, following the death of Professor R. E. Deane in

October, the Associate Curator was responsible for the course in Pleistocene Geology for fourth-year students.

Once again the anticipated date of opening for the new Gallery of Invertebrate Palaeontology has had to be put back. The task of selecting the fossils for the various cases was completed on schedule in June, 1965, and the very considerable labour involved in making the models for the dioramas was also finished by the summer of last year. On the other hand, the work on the case interiors has lagged considerably and, although a turnover of art staff has been a serious factor, by far the greatest impediment has been caused by the fact that personnel have been constantly diverted to other tasks, many of which have been trivial. The disappearance from the gallery for several weeks at a time of artists and carpenters diverted elsewhere in the Museum, not to mention special exhibitions, has been inconsistent with the assurance that the Palaeontology gallery would "take priority over everything else." It is realized that a proper balance must be struck between the many demands from various sections of the Museum but it is only when all these are known and allowed for that a realistic timetable can be drawn up for any particular gallery project. As it is, the Palaeontology gallery by the time it is completed this summer will have taken just over 2½ years from its inception. This, when the floor area and general complexity of the exhibits are considered, is probably not excessive and would seem to compare quite favourably with other gallery projects of recent years.

Department of Vertebrate Palaeontology

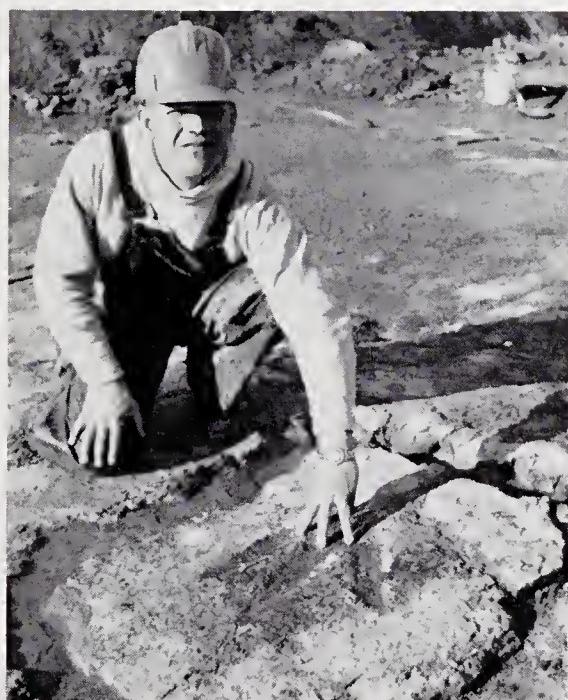
Research by the Associate Curator, Dr. A. G. Edmund, proceeded along several diverse lines. Much time was occupied in preparing the manuscript on dentition for the *Biology of the Reptilia* soon to be published by Academic Press. This description of the embryology, anatomy, evolution and diversity of both fossil and modern dentitions amounted to sixty pages, plus about thirty figures.

The Pleistocene megatherium *Essonodontherium* was re-examined and found to be a congenitally deformed specimen of *Megatherium americanum*. A manuscript describing this has been completed and will be published in a South American journal.

Preliminary work on the revision of the *Chlamytheriinae* (giant fossil armadillos) has been completed. Specimens and casts of contemporary and ancestral species have been assembled for comparison.

The Ecuadorian and Peruvian specimens of *Scelidodon* have been catalogued and housed in new cabinets, along with the considerable collection of casts of related species made in other museums.

One hundred million years ago these dinosaur footprints were fresh. The ROM sent a field party to British Columbia's Peace River area to make full-size latex casts for display.



Dr. Edmund and Mr. Gyrmov visited 14 museums in the United States during May and June. Several collections of edentates were studied, adding to our knowledge of the anatomy, evolution and distribution of the group. Techniques of preparation, conservation and exhibition of vertebrate fossils in other museums were recorded, and this knowledge will be applied to the improvement of our laboratory and galleries.

A large number of exchanges were arranged and consummated during the year. Among other items we have received skeletons of *Trilophosaurus*, *Typhothorax*, *Dimetrodon*, *Tylosaurus*, and *Merychippus*. In addition, moulds were made of the dentitions of over 200 Tertiary mammals. These acquisitions represent the beginning of an intensive programme of exchange, purchase, and collecting which will culminate in the well-rounded collection necessary for the proper teaching of vertebrate palaeontology. As a result of research and exchanges, 465 specimens or lots of specimens were catalogued during the year. Over 50 skeletons or skulls of recent animals were also added to the reference collection.

In October Dr. Edmund and Mr. Gyrmov drove to Fort St. John, British Columbia, to investigate dinosaur footprints uncovered during construction of a hydro-electric dam. Latex moulds were made of trackways of two types of dinosaurs. A 27-foot fibreglass cast of the larger one is now on display. Dr. Edmund described the specimens at the annual meeting of the Society of Vertebrate Palaeontology at Lawrence, Kansas.

Dr. C. S. Churcher, Research Associate, has almost completed his study of *Smilodon*, which will represent a monographic revision of the genus. In addition to his teaching activities he has conducted field work in the Tertiary and Pleistocene of Alberta and Saskatchewan and studied several collections of Pleistocene mammals.

In addition to the dinosaur trackway mentioned above, a fine skull of the Triassic amphibian *Paracyclotosaurus* has been mounted and displayed. The skeleton of *Edaphosaurus* is almost ready for display, but since it is being mounted by a new experimental technique it has required more time than anticipated.

Plans are being prepared for a reorganization of the exhibition galleries. Since the necessary money to complete the project is not in sight it will be necessary to proceed piecemeal. The first unit will feature human prehistory, illustrating the evolution of man from the earliest primate up to the end of the Neolithic.

During the past year the display of living reptiles has attracted considerable attention. In view of the low cost this will be continued and possibly expanded.

Following the completion of the reptilian tooth replacement project the main vertebrate palaeontology study laboratory was remodelled, resulting in increased work and storage space. The assignment of the Museum's human prehistory collection to this Department added an extra burden to the already overcrowded facilities, but this was partly relieved by the construction of a mezzanine floor in room 247. The extra space will also accommodate material being taken off display to make way for new exhibits.

The Department again enjoyed the services of Mrs. H. A. Jones, who curated the edentate collection. Two high school students, Mr. M. Singleton and Mr. A. Morris, collected and prepared numerous skeletons of recent animals.

From the Museum's Women's Committee, Mrs. Kenneth Gunton systematized and recopied the old field records, while Mrs. R. L. MacFeeters sorted collections of small bones and performed other valuable tasks.

Conservation Department

The number of staff was increased during this year and now consists of the Curator, Mr. R. M. Organ, one Conservator, two Assistant Conservators, one temporary worker (three months only) and a Secretary.

Investigations were made on the suitability of various synthetic materials for use in the repair, reconstruction or protection of antiquities. In addition to establishing optimum formulations, measuring long-term dimensional stability and power of protection or discovering solvents that will allow the work to be undone when

necessary, these activities have served to develop the skills of the newer members of the staff. Other investigations have arisen out of immediate needs. For example, as soon as it became obvious that live steam would have to be released into the atmosphere of Exhibition Hall in order to raise the humidity to the high level requested by the Japanese, the possibility was examined that the corrosion-inhibitors used in modern boilers might be injurious to objects made of silver or copper. The subject was investigated by both inquiry and actual rigorous testing, with the result that it is now demonstrable that metal in an unprotected condition will not become tarnished appreciably during exposure to even excessively severe conditions over a period of six months and that it will probably survive much longer exposures unstained.

One other idea that has been investigated on a limited scale is the possibility of employing synthetic materials to replace missing metal trimmings on old furniture, with a view to avoiding falsification during repair and restoration. The first experiment proved satisfactory and if it remains satisfactory over a prolonged period of exposure in the gallery, it will provide perhaps the most advanced example of furniture restoration in the world.

In preparation for the Japanese Exhibition and during its progress the relative humidity in Exhibition Hall and Armour Court was maintained at levels between 60 and 65 per cent. This was achieved, as a result of detailed investigations of air flow, by boosting the output of the normal conditioning and heating plant in Exhibition Hall and diverting most of the conditioned air into Armour Court and by installing hired Defensor Humidifiers in Armour Court to make up losses of moisture. Both types of humidifier required regular supervision amounting to about two man-hours daily throughout the period of preparation and exhibition.

Discussions on the scientific and practical background are held among our own staff whenever a particular antiquity introduces new features of interest. Typical examples are as follows: ultra-sonic cleaning, abrasion, electrolytic reduction, vacuum impregnation. In addition a brief talk has been given to the Archaeology curators to acquaint them with the gist of the many technical lectures given at the Boston symposium and the I.C.O.M. meetings in Washington and New York.

The departmental rooms have been modified to increase facilities and improve output. A new doorway between rooms C-56 and C-55 facilitates contacts between members of the staff and serves to increase productivity. Two new sinks combined with effective fume hoods now provide facilities for washing large or delicate objects and for the more extensive adoption of chemical methods of treatment. A new pattern of work bench, installed on an experimental basis, is intended to provide temporary safe-storage for objects under treatment, together with an elevated working level for certain tasks.

On the scientific side, equipment has been set up for the qualitative analysis of small amounts of material and this has been used during the preparation of examination reports, aided by the facilities for X-ray diffraction analysis placed at our disposal by the Mineralogy Department. A metallographic microscope, purchased with the aid of grants from the National Research Council and the British American Oil Company, has been applied to problems presented by several departments of the Museum, namely: Greek and Roman (a silver wreath), European (plaques and coins), Canadiana (bloom on picture glass), Mineralogy (mineral specimens), Archaeology (an iron bolt from a shipwreck) and Mammalogy ("calculi" in a bat's stomach).

Some 350 objects have passed through our newly established recording system for treatment. These include objects treated under our supervision, for example, silver-ware cleaned by the preparators and items of furniture undergoing repair by the cabinet-maker. They do not include sundry isolated special tasks, such as the washing of over 200 Cypriote pots prior to cataloguing, repair of manikins for the Textiles Department, cleaning of objects in preparation for photography, etc.

Condition reports have been made on 1,845 objects. A vocabulary for use in these reports has been prepared by Mrs. Phillimore.

Twenty examination reports have been made, distributed among five departments. The standard of these reports is improving as a result of the acquisition of scientific investigatory equipment.

Some 80 enquiries from members of the public have received attention.

Vandalism in the galleries has continued in a sporadic manner and has occasioned repair work that both depreciates the value of the object and distracts our attention from more productive activities.

For objects already in the collections priority of expenditure must be given to modifying the heating system of the Museum and to the introduction of humidifying equipment. Estimates of the cost of these improvements, requested last year, have not yet been received from the University engineers. In the event that essential improvements to the European galleries cannot be put in hand before next winter it is suggested that serious consideration be given to re-housing the various objects of European origin permanently in Exhibition Hall, which as a result of preparations for the Japanese Exhibition can now be maintained at any required level of humidity. Sufficiently humid conditions can be maintained there throughout the winter at no greater cost than an application of vapour-barrier paint to the walls and some attention to the windows and shipping doors.

Department of Display (General)

Mr. Harley Parker writes that there can be no question that the highlight of the year has been the show of Japanese Art Treasures.

"The opportunity to deal with material of this quality can only command the best efforts of a designer. It was, therefore, my attempt to present these art objects in the very best environment.

"It is obvious that we have failed to meet our commitments in the Gallery of Invertebrate Palaeontology but I feel that it should be taken into consideration that we have embarked on a gallery which has no counterpart. Therefore, it has been extremely difficult to assess the time factor. However, there is no question in my mind that when we open this gallery it will generate a great deal of attention and possibly orientate the mind of the public to totally new concepts of presentation. I would draw attention to the fact that galleries of this kind demand very different talents than those required by a department of art and archaeology."

Mr. Parker went to Los Angeles to see the Japanese installation and came to the conclusion that an infinite amount of light capacity can be detrimental to a proper exposition. "Only in Toronto did we have sufficient manipulable space and I believe we used lighting in a manner that allowed the objects to speak for themselves.

"It is my desire to initiate in the Royal Ontario Museum some experiments which would lead to a more exact idea of our audience, particularly at the younger ages.

"While both the preparatorial and carpentry staffs are remarkably efficient it is brought to my attention almost daily that the staffs are not large enough to cope with the demands.

"The redesign of the Armour Court of course, merits attention, but it would seem inadvisable to embark on new projects while the gallery of Invertebrate Palaeontology remains unopened.

"Further, there is natural concern with the development of the Canadian Indian Galleries which would seem to demand a top priority in a Canadian museum.

"The concept of a grammar of museum exposition must still be formulated but there can be no question that the Royal Ontario Museum is in the forefront of such formulation."

Department of Display (Mineralogy)

Mr. John Hillen reports that most of the year was devoted to the implementation of his designs and models for cases and displays in the new Gallery of Mineralogy

One of the many activities offered by the Saturday Morning Club.



made possible by the generosity of the International Nickel Company. The cases were installed, lighting fixtures fitted and several special displays, such as the mineral cave and the stalactite, stalagmite simulations, were constructed. Mr. Hillen was also called in to advise on the forthcoming alterations to the Ethnological Galleries and also on the planning of the planetarium exhibition galleries.

Department of Display (Biology)

Mr. Shortt spent a busy year bringing together, casting and reconstituting the many specimens he had collected while on the Galapagos expedition early in 1965. The work in the laboratory was carried out contemporaneously with his design of a Galapagos diorama and so assiduously has this been done that the diorama is in a remarkably advanced state. In this effort Mr. Shortt was helped for limited periods by Mr. Paul Geraghty, the illustrator for the Chief Biologist's Department, who will shortly become Mr. Shortt's display assistant. Mr. Shortt also advised on gallery developments in Ethnology and Vertebrate Palaeontology and was of material assistance in temporary exhibitions in the Zoology galleries.

Education Department

The Education Department is one of the service departments of the Royal Ontario Museum, serving both the general public and the other departments within the institution. The latter idea may be a new one to some curators. Yet it should be pointed out that the Education Department acts as a buffer between the young fry and the curatorial departments.

The major part of the year is spent in interpreting the gallery material of the curatorial departments to the elementary and secondary schools of the province. As in other years, the greater percentage of the pupils come from Metropolitan Toronto. It is encouraging to note that pupils from separate schools are now making greater use of our facilities. Over 72,000 pupils will have received instruction by the end of June. Another 21,000 will have visited the galleries under the supervision of their own teachers. For a more accurate picture of children and the museum, add approximately 280,000 who come as individuals.

Formal instruction with Museum materials extends beyond the building. Some 60 elementary and 8 secondary schools from Timmins to Kapuskasing were visited by three teachers, Miss P. Bolland, Miss A. Chrysler and Miss M. Fitz-Gibbon. In the classrooms, authentic material from curatorial departments was presented to and discussed with 7,900 pupils—colourful and exciting teaching supplements to the textbook. Both the objects carried by our Museum teachers and those in our 15 travelling cases are chosen to supplement various courses of the curriculum. The

travelling cases, shipped from one school to another, were circulated to some 200 schools throughout the province. The success of the travelling services depends upon the assistance of the local education authorities. The advice and co-operation of principals, supervisors and inspectors is greatly appreciated by this Department.

Particular mention should be given of the instruction given to two groups above the secondary school level. History specialists from the Ontario College of Art, as future teachers, were introduced to the ways in which they could make use of Museum displays. Fourth-year women students in the school of Physical and Health Education were given a series of six lectures emphasizing the place of athletics in the ancient world. These were so successful that arrangements have been made to repeat the series next fall.

No report would be complete without mentioning the Saturday Morning Club ably organized by Miss E. Berlin. The best critics of the Club are the children themselves. Through the Children's Council come suggestions for programmes. They recognize the Club as an important addition to their education, as an activity which provides new experiences and friendships. The highlights of the year were the occasions when we had guest speakers or demonstrators. A visit to Africa, digging in Greece, jewellery making, living among the Eskimo were the themes studied on such occasions. For 250 children each year, the Saturday Morning Club is a magic carpet.

Casual groups visiting the Museum have varied in interest and purpose. A sample list includes high school students visiting on the Dominion Centennial inter-provincial travel project. Last year students from Manitoba and New Brunswick made bookings with this Department. In August, provincial representatives of 4-H Clubs held two days of their national conference in the Museum. Displays illustrating the activities of women throughout the ages were studied. New classes of nurses from Wellesley Hospital were introduced to the Museum as part of their community—and as one of Toronto's public cultural institutions. Trinity College freshmen scheduled the Royal Ontario Museum as part of their indoctrination programme. The International Institute of Metropolitan Toronto and the Psychiatric Hospital frequently use the Museum for teaching and therapeutic purposes.

Although the greater proportion of time is spent with the schoolchildren of the province, this fact should not overshadow the adult work of the Department. The response to the public films and to organized courses, indicates, we believe, a real appreciation of the programme.

An afternoon seminar in Period Furniture, Silver, Fabrics and Fashions was organized at the request of the National Council of Jewish Women in which the Canadiana, European and Textiles Departments collaborated.

Miss E. Martin's report on Museum Extension courses includes four courses which appealed to four different types of people. *The Invisible Environment*, as one participant wrote, added "another dimension to the thinking" of those who attended. *Keeping up with the Earth* was a geology series given for the fourth consecutive season. *The Underwater World* brought a completely new clientele to the Museum. *In Search of Quebec* brought many eminent guest speakers from that province. The need for a special type of publicity for these courses was reflected in the low attendance at the last series mentioned. It is hoped that a new policy of advertising can be formulated which will inform the public of lectures by prominent authorities. In spite of the above criticism, 2,396 persons attended the lectures.

During the summer of 1965, 12 film programmes for older children, adults and families were presented. Each was related to specific gallery material and was followed by informal gallery talks. The theatre attendance was 1,310. The attendance at the gallery talks was much lower, but this provided an opportunity for spirited discussion.

The regular 9 Sunday Film Programmes were, as usual, well attended (4,665 total). Because of the popularity of two feature films, *The Mystery of Stonehenge* and *World without Sun*, the programme was shown twice on two different occasions.

Special commendation should be given to Miss E. Martin, who with the Curator

of the Far Eastern Collections planned four evening programmes to coincide with the exhibition of Japanese Art Treasures. The programmes succeeded in capturing something of the original setting to which the works of art belonged and in creating a receptive frame of mind for the viewing of the Treasures. The outstanding films were enjoyed by 15,050 persons.

In total, well-chosen documentary films were seen by 21,025 persons during the year. Free public film showings seem to provide a service to a greater number of adults than any other programme within the Museum.

The Education Department was again much assisted by the Members' Committee, both in the regular gallery talks and with the Japanese art treasure tours. A new project beyond the walls of the Museum was begun at the Crippled Children's Hospital. Members of the Committee alternated with Museum teachers for the 16 meetings, which were held after school and proved so stimulating to the ever-transient population that plans have been made to continue next year.

Members of the Education Department met representatives from both the Museum and the teaching professions. Various members of the Curriculum Branch of the Ontario Department of Education have been eager to discover what specific Museum materials are available for their teachers. The Ontario Secondary School Teachers' Federation has requested series of slides to assist in the teaching of literature. Representatives from the Centennial Centre of Science and Technology have met several times with our teachers to discuss physical requirements as well as museum teaching methods.

It is apparent that to carry on the programme outlined in this report the Education Department must be familiar with all curatorial collections. May we take this opportunity to thank the curators for their co-operation and sympathy with our Museum teaching programme.

Information Services

In retrospect, the year seems to have been dominated by the extraordinary publicity measures for *Art Treasures of Japan*. These included stand-up posters (designed through the courtesy of J. Walter Thompson Company Limited and distributed widely by the Members' Committee); 50,000 three-colour leaflets; network television broadcasts taped or filmed in the exhibition itself; colour coverage in both English and French-language weekend newspaper supplements; special exhibitions in retail stores; and general publicity and advertising before and during the event. The detailed organization of this operation was carried out by Mrs. Christa Singer.

Nevertheless, several other exhibitions were successfully publicized in the course of the year, among them *The Dead Sea Scrolls*, second most popular display in the Museum's history (surpassed only by *Tutankhamun Treasures* a year earlier), and *In a Canadian Attic*, which set attendance records in the Sigmund Samuel Canadiana Gallery. The continuing work of the Museum in research, conservation, display and education continued to receive nation-wide attention in the press, radio and television. A series of popular Sunday afternoon free lectures was initiated by several members of the staff, who described current interests to audiences which varied greatly in age and education but were uniform in attentiveness. Two major new ventures into education through the electronic media were carried out: one, a series of interviews with staff members over CJRT, the FM station of Ryerson Polytechnical Institute; the other, a series of television programmes "behind the glass wall," made for the CTV network in co-operation with the Television Committee of the University.

The Museum's programme of general publications has met a gratifying response. Some 12,000 booklets in the "What? Why? When? How? Where? Who?" series were sold within the first seven months of publication. As a result, eight more titles in the series were produced during the current year: *Women's Costume in Ontario (1867-1907)* by K. B. Brett; *Jewellery of the Ancient Near East* by Winifred Needler;

The False Face Society of the Iroquois by E. S. Rogers; *Lighting the Pioneer Ontario Home* by L. S. Russell; *Early Ontario Furniture* by Gerald Stevens; *Evolution* by W. E. Swinton; *Niagara Falls: Story of a River* by Walter M. Tovell; and *The Beardmore Relics: Hoax or History?* by A. D. Tushingham.

Mrs. Hill of the Members' Committee carried out important research into the history of the Royal Ontario Museum. She has now interviewed a number of senior and former members of the staff, and is building an invaluable file of personal reminiscences and anecdotes. It is to be hoped this project will be continued, and will result eventually in a book of considerable interest and significance.

During the past three years, the Information Officer has had occasion over and over again to be grateful for the interest, advice, assistance and enthusiasm of his colleagues. On a very practical level, Information Services could not have functioned in many areas without the frequent, and freely offered, collaboration of the preparators, the photography department and the superintendent's office. There is scarcely a member of the Museum staff, however, who has not helped in some way a department which must, by its very nature, depend on the patience and co-operation of others.

Library

Miss Eleanor Feely, Chief Librarian, reports that the statistics recorded in 1965-66 show a further increase in the use of Library resources, not only by Museum staff, but also by students and visitors to the Museum. During the year, the staff of six undertook 1,586 reference searches for Museum staff, and circulated 2,819 titles. A growing awareness of the Library's collections outside the Museum was reflected in 1,220 reference queries received from students and visitors. Museum staff utilized the Library's interloan service; 434 titles were borrowed from other libraries for staff, and the Library's outgoing loans totalled 155 items. Although the greater use of the Library indicated a welcome recognition of services offered, the energies of the staff and the capacity of departmental facilities have been taxed to the maximum.

Cataloguing remained an important aspect of the Library's operations. By May 31, 1,395 new titles had been acquired for the collection, and 862 titles from the older collections were recatalogued, adding over 16,000 cards to the main catalogue.

The institutional exchange programme continued to be active; ten new titles published by the Museum were mailed to participating institutions around the world.

For the first time, the Museum Library was included in the University's School of Library Science student training programme; during the training period two student librarians were assigned to the Museum Library. The Library staff also arranged 27 orientation tours of the Library for Museum staff and University students.

The Library gratefully acknowledges the many gifts of books received, especially the donations made by Dr. A. G. Huntsman, Dr. L. S. Russell and Mr. T. M. Shortt.

The resignations of two staff members were received with regret; both Mrs. Nancy Sadek, Assistant Librarian for five years, and Mr. T. Crichton left the Museum to accept positions elsewhere.

Women's Committee

Even more than usual the ladies played a prominent part in the Museum year. They continued their departmental assignments, overhauled the library in Canadians and organized the great Easter Party for children. Journey to Japan, the 1966 theme, provided what was thought to be the best party ever and the elaborate planning that went into the venture, the excellence of the film programme, and the "side shows"—dressing in Japanese style, the art of paper-folding and the use of some Japanese instruments—appealed to the children, who were on occasion quite free

to make their own selection of events. For the first time, too, casual visitors to the Museum were invited to join the party.

The major activity of, and we might say challenge to, the Committee was the *Art Treasures of Japan* exhibition—for which many of the ladies studied intently for a year. Under Mrs. Ferris's leadership they worked hard to be able to make maximum use of the show and to use their knowledge to improve the visits of less fortunate people. By selling catalogues, slides and postcards, by distributing posters and generally advertising the show among their many friends and by giving lecture tours to the exhibition visitors, they earned the gratitude of the Museum and the visitors alike. This was a splendid effort.

They did other important things. They carried knowledge of the Museum and its treasures to the Crippled Children's Hospital, where the response was most encouraging. They also carried out observations on the use of strollers with young children in museums at the Director's request; it is interesting to note that their recommendation is that strollers should be permitted in the Royal Ontario Museum.

Once more we can only say—Thank you, ladies, please carry on the good work.

W. E. SWINTON

USES OF THE ROYAL ONTARIO MUSEUM GALLERIES AND STUDIES

	No. of Visitors	Total
A. <i>Visitors (Main Building)</i>	486,924	486,924
B. <i>Sigmund Samuel Canadiana Gallery</i>		
1. Visitors—individual	17,382	20,339
2. School Classes (included in C)	5,225	
3. Other uses (included in B-1)	2,426	
4. Extension Courses, etc. (included B-1 or D)	1,134	
	26,167	
C. <i>School Classes</i>		
1. Metropolitan Toronto	46,891	
2. Provincial	27,211	
3. Unconducted	24,905	99,007
D. <i>Other Groups</i>		
1. Ontario College of Art	23,862	
2. Miscellaneous	19,645	
3. University of Toronto	34,606	
4. Extension Courses	2,389	80,502
E. <i>Other Uses</i>		
Lectures, Openings, etc.	7,860	7,860
F. <i>Rentals</i>	34,904	34,904
GRAND TOTAL		729,536

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